

IN THE CLAIMS:

Please amend claims 3 and 21 as follows:

1. (Cancelled)

2. (Cancelled)

3. (Currently Amended) An adaptive equalizer for generating an error signal, the adaptive equalizer comprising:

 a summer that receives an input signal and a decision feedback equalizer output signal and provides a difference signal indicative thereof;

 a trellis decoder that receives and decodes the difference signal to provide a decoded output signal;

 a mapper, which receives the decoded output signal and maps and scales the decoded output signal to provide a mapped and scaled output signal; and

 ———a decision feedback equalizer that receives the mapped and scaled output signal and the difference signal and generates a raw error signal indicative of the difference, and processes (i) the mapped and scaled output signal, (ii) the difference signal and (iii) the raw error signal to provide the decision feedback equalizer output signal.

4. (Cancelled)

5. (Previously Presented) An adaptive equalizer comprising:

 a FIR filter having a FIR filter output;

 a trellis decoder having a trellis decoder input coupled to the FIR filter output;

 a mapper coupled to the trellis decoder, having a mapper input, a first mapped and scaled

output and a second mapped and scaled output, the mapper being coupled to the trellis decoder output; and

a decision feedback equalizer having a DFE input and a DFE output, wherein the DFE input is coupled to the first mapped and scaled output;

wherein an error signal is generated by subtracting the trellis decoder input from the second mapped and scaled output.

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9.(Previously Presented) An adaptive equalizer, comprising:

a summer that receives an input signal and an equalizing data signal, and provides a difference signal indicative thereof;

a trellis decoder that receives the difference signal and provides a decoded output signal;

a mapper that receives the decoded output signal, and maps and scales the decoded output signal to provide a mapped and scaled output signal; and

a decision feedback equalizer that receives and processes (i) the mapped and scaled output signal and (ii) the difference signal to provide the equalizing data signal.

10.(Previously Presented) The adaptive equalizer of claim 9, wherein the trellis decoder

comprises a Viterbi decoder.

11.(Previously Presented) The adaptive equalizer of claim 3, comprising:

a filter that receives and filters a signal to provide the input signal.

12.(Previously Presented) The adaptive equalizer of claim 3, wherein the trellis decoder comprises a Viterbi decoder.

13.(Previously Presented) The adaptive equalizer of claim 3, wherein the adaptive equalizer is configured and arranged to process 8VSB signals.

14.(Previously Presented) The adaptive equalizer of claim 3, wherein the adaptive equalizer is configured and arranged to process quadrature amplitude modulation (QAM) signals.

15.(Previously Presented) The adaptive equalizer of claim 3, wherein the adaptive equalizer is configured and arranged to process offset quadrature amplitude modulation (QAM) signals.

16.(Previously Presented) The adaptive equalizer of claim 13, wherein the trellis decoder comprises at least sixteen stages.

17.(Previously Presented) The adaptive equalizer of claim 5, wherein the adaptive equalizer is configured and arranged to process 8VSB signals, and the trellis decoder comprises at least sixteen stages.

18.(Previously Presented) The adaptive equalizer of claim 17, wherein the decision feedback equalizer also receives the error signal and processes the first mapped and scaled output and the error signal to generate the DFE output, and the trellis decoder comprises a Viterbi detector.

19.(Previously Presented) The adaptive equalizer of claim 9, comprising:
a filter that receives and filters a signal to provide the input signal.

20.(Previously Presented) The adaptive equalizer of claim 19, wherein the input signal is a vestigial sideband encoded signal, and the trellis decoder comprises at least sixteen stages.

21.(Currently Amended) An adaptive equalizer comprising:
a trellis decoder having a trellis decoder input and a trellis decoder output;
a mapper coupled to the trellis decoder output, having a mapper input, a first mapped and scaled output and a second mapped and scaled output; and
a decision feedback equalizer having a DFE input and a DFE output, wherein the DFE input is coupled to the first mapped and scaled output;
wherein an error signal is generated by subtracting the trellis decoder input from the second mapped and scaled output.

22.(Previously Presented) The adaptive equalizer of claim 21, wherein the decision feedback equalizer also receives the error signal and processes the first mapped and scaled output and the error signal to generate the DFE output.

23.(Previously Presented) The adaptive equalizer of claim 22, wherein the trellis decoder comprises a Viterbi detector.

24.(Previously Presented) The adaptive equalizer of claim 22, wherein the adaptive equalizer is configured and arranged to process an amplitude modulated signal.